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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/176,124	10/21/1998	GERHARD SCHNEIDER	10191/857	7808
26646	7590	02/15/2005	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			OLSEN, KAJ K	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 02/15/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/176,124

Applicant(s)

SCHNEIDER ET AL.

Examiner

Kaj K Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 3-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-9 and 11-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki et al (USP 4,718,999). Suzuki is being cited for the first time with this office action.

3. Suzuki discloses a planar sensor element comprising a layer structure including a measuring cell (electrodes 123, 124 and the portion of electrolyte between the two electrodes) and a heating element 122 embedded in a layer plane of a layer structure (e.g. see fig. 9 and 11). With respect to the covering layer, the lowermost portion of electrolyte 120 in fig. 11 (i.e. the electrolyte below elements 126, 129 and 131) would read on the claimed “covering layer” giving the claim language its broadest reasonable interpretation. In particular, that portion of electrolyte 120 is covering electrode 126 and chamber 129. Said covering layer is not functioning as part of an oxygen pump or oxygen concentration cell. With respect to the layer plane being centered, Suzuki discloses that the heater should be in the center of the sensor element (col. 8, lines 8-15).

4. With respect to the new limitation requiring the heating element be disposed “*directly between* the measuring cell layer and the covering layer” (emphasis added), this limitation does not set forth what the applicant appears to construe it to set forth. In particular, this limitation

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does not state that the heating element is *directly in contact* with the measuring and covering layer, rather the heating element is *directly between* the measuring and covering layers. Because the heater of Suzuki is not off-center from the cover layer and measuring layer, then the heater element is directly between the measuring and covering layers. See fig. 11 for example.

5. With respect to claims 3 and 4, the determination of patentability for the claim is based on the product itself. Because the product of the claim is identical to the invention of Suzuki the process from which it was made is the same as or obvious over the process utilized by Suzuki (see *In re Thorpe*, 777 F.2d 695, 698). See also pp. 7 and 8 of the Appeal Decision (paper no. 35), which affirmed said interpretation of the claim. In addition, see also col. 8, lines 44-60 of Suzuki where it describes that the sensor element shown in the figures is constructed as a laminate of a series of layers.

6. With respect to claim 5, Suzuki shows the heater 122 embedded in an insulating layer 121. See fig. 9 and col. 8, lines 8-10. Although Suzuki never explicitly discloses that the heater is embedded within two layers of 121, whether or not the heater were embedded in two layers (as opposed to any other means that would allow the heater to be so embedded within the insulating material) would appear to be irrelevant by the fact that the sensors of Suzuki and the instant invention are sintered after construction (col. 8, lines 44-60). Because the two layers of the instant invention are part of the sensor construction and that sensor is eventually sintered (see p. 4, lines 13-35), the final product of the heater of Suzuki would appear to be analogous to the final product of the instant invention and the process from which it was made is the same as or obvious over the process utilized by Suzuki. With respect to the two layers each having a thickness “approximately equal” to the other, the layers themselves are part of the process for

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making the device. Moreover, Suzuki shows the heater element being approximately centered within the insulating layers (see the figures).

7. With respect to the sealing frame, Suzuki shows electrolyte being placed about the heater assembly (see any of the sensor figures).

8. With respect to claim 8, because the heater of Suzuki is disclosed as being in the center of a sensor constructed almost entirely of electrolyte 120 (see rejection above), Suzuki would inherently possess the claimed homogeneous heat distribution.

9. With respect to the covering layer being an entirety of the planar sensor element or contacting a second opposing planar surface of the heating element, see fig. 13-16, which are further modifications of the embodiment of fig. 9.

10. With respect to new claims 13 and 14, these various limitations were already addressed in the preceding rejection and will not be reiterated here.

11. Claims 1, 3-9, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mase et al (USP 4,769,123). Mase is being cited and relied on for the first time with this office action.

12. Mase discloses a planar sensor element comprising a measuring cell layer (16, 18) a covering layer (46 or 74) and a heating element 62 disposed between the measuring cell layer and the covering layer in the form of a layer plane 60. See fig. 1 and 3 and col. 6, lines 36-52. Furthermore, because the various layers of the sensor elements are shown stacked on top of each other and in line with each other, all the various elements of the sensor (including the layer plane) would read on "at least approximately centered" giving the claim language its broadest reasonable interpretation. Although this isn't "centered" in the sense that the applicant has

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disclosed the centering (namely centered with respect to the vertical layers), it reads on the claimed term.

13. With respect to the new limitation requiring the heating element be disposed “*directly between* the measuring cell layer and the covering layer” (emphasis added), this limitation does not set forth what the applicant appears to construe it to set forth. In particular, this limitation does not state that the heating element is *directly in contact* with the measuring and covering layer, rather the heating element is *directly between* the measuring and covering layers. Because the heater of Mase is not off-center from the cover layer and measuring layer, then the heater element is directly between the measuring and covering layers. See fig. 3 for example.

Moreover, even if the examiner were to construe the applicant’s “directly” as requiring direct contact, the measuring layer 18 and cover layer 46 or 74 are in direct contact with the heating element.

14. With respect to claims 3 and 4, the determination of patentability for the claim is based on the product itself. Because the product of the claim is identical to the invention of Mase the process from which it was made is the same as or obvious over the process utilized by Mase (see *In re Thorpe*, 777 F.2d 695, 698). Moreover, Mase discloses a plurality of electrolyte elements 20 and 22.

15. With respect to claims 5-7, Mase teaches the use of two insulating layers 64 and 66. Moreover, fig. 2 shows those two layers to be of the same approximate thickness.

16. With respect to claim 8, because the applicant does not define the metes and bounds of “approximately homogeneous distribution of heater power”, presumably Mase satisfies some reasonable interpretation of a homogeneous distribution of heater power. Although Mase might

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not provide the homogeneous distribution that would have been provided by the instant invention, the examiner sees nothing inherent in the term "homogeneous distribution of power" that would read free of the teaching of Mase.

17. With respect to claims 9 and 11, see fig. 1 and 3.

18. With respect to claims 13 and 14, these various limitations were already addressed above and will not be reiterated here.

Claim Rejections - 35 USC § 103

19. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

20. Claims 5-7 in the alternative are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Suzuki or Mase in view of Kato et al (USP 5,879,525).

21. In the above rejections, the examiner treated the various limitations of claim 5 as being part of the process of making, which would have been the same or obvious over the process of the above references. However, even if the examiner were to give weight to the use of two insulating layers of approximately equal thickness, this is well known in the art. In particular, Kato discloses a heater assembly where the heater conductor is sandwiched between two equally thick insulating layers. See col. 14, lines 57-64. It would have been obvious to one of ordinary skill in the art at the time the invention was being made for Suzuki or Mase to utilize the process of Kato for constructing the heater layer plane because the use of green films or tapes for heater construction is well-known in the art and requires only routine skill.

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22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Suzuki or Mase in view of Yamada '807.

23. Suzuki and Mase set forth all the limitations of the claim, but did not explicitly recite the use of stabilized zirconium oxide as the choice of zirconium oxide. Yamada '807 already set forth the desirability of utilizing the stabilized form of zirconia as the zirconia material for the sensor. See col. 4, lines 27-38. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Yamada '807 for the sensors of either Suzuki and Mase because, as the term "stabilized" implies, this is a more stable form of zirconia to work with.

Response to Arguments

24. Applicant's arguments filed 12-6-2004 have been fully considered but they are not persuasive. Most of applicant's arguments center around the applicant's belief that the addition of "directly" to the independent claims reads them free of the prior art. That would only be true for the teaching of Yamada '807 because the heating element of Yamada '807 would not be reasonably be construed as being "directly between" the measuring cell and any of elements 4 or 5. For the teaching of Suzuki, this new limitation does not free of them for the reasons set forth above.

25. With respect to claim 8, applicant urges that the examiner must provide a basis in fact and/or technical reasoning why the examiner believes the prior art provides the set forth function. The examiner is confused by this assertion because the examiner did this. See paragraph 7 from the previous office action (also reprinted in this office action). If the applicant

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believes the examiner were in error with his conclusion, then the applicant is invited to explicitly refute the examiner's conclusion.

26. With respect to the claims and their interpretation of them with respect to Mase, applicant urges that the definition of the centering of the layer plane reads free of the examiner's interpretation here. This is not persuasive. There is no explicit assertion in the claims that the centering must with respect to the layer planes. Using claim 1 as an example, it only states that the layer plane must be "approximately centered with respect to the sensor element". In particular, there is no sense of direction affiliated with this centering step that reads free of the centering the examiner is relying on with the rejection of Mase.

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Thursday from 5:30 A.M. to 3:00 P.M. and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AU 1753
February 14, 2005



KAJ K. OLSEN
PRIMARY EXAMINER